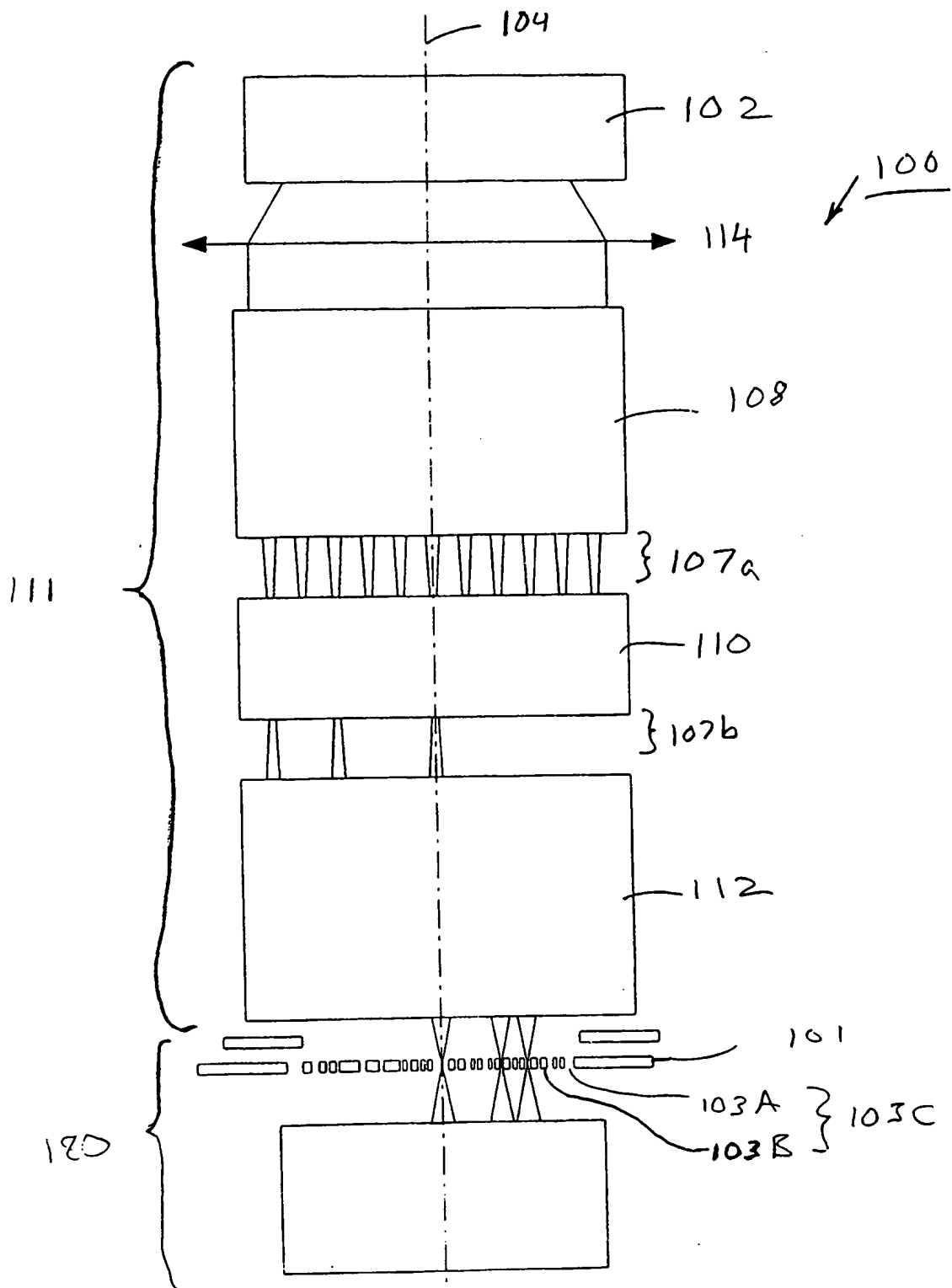
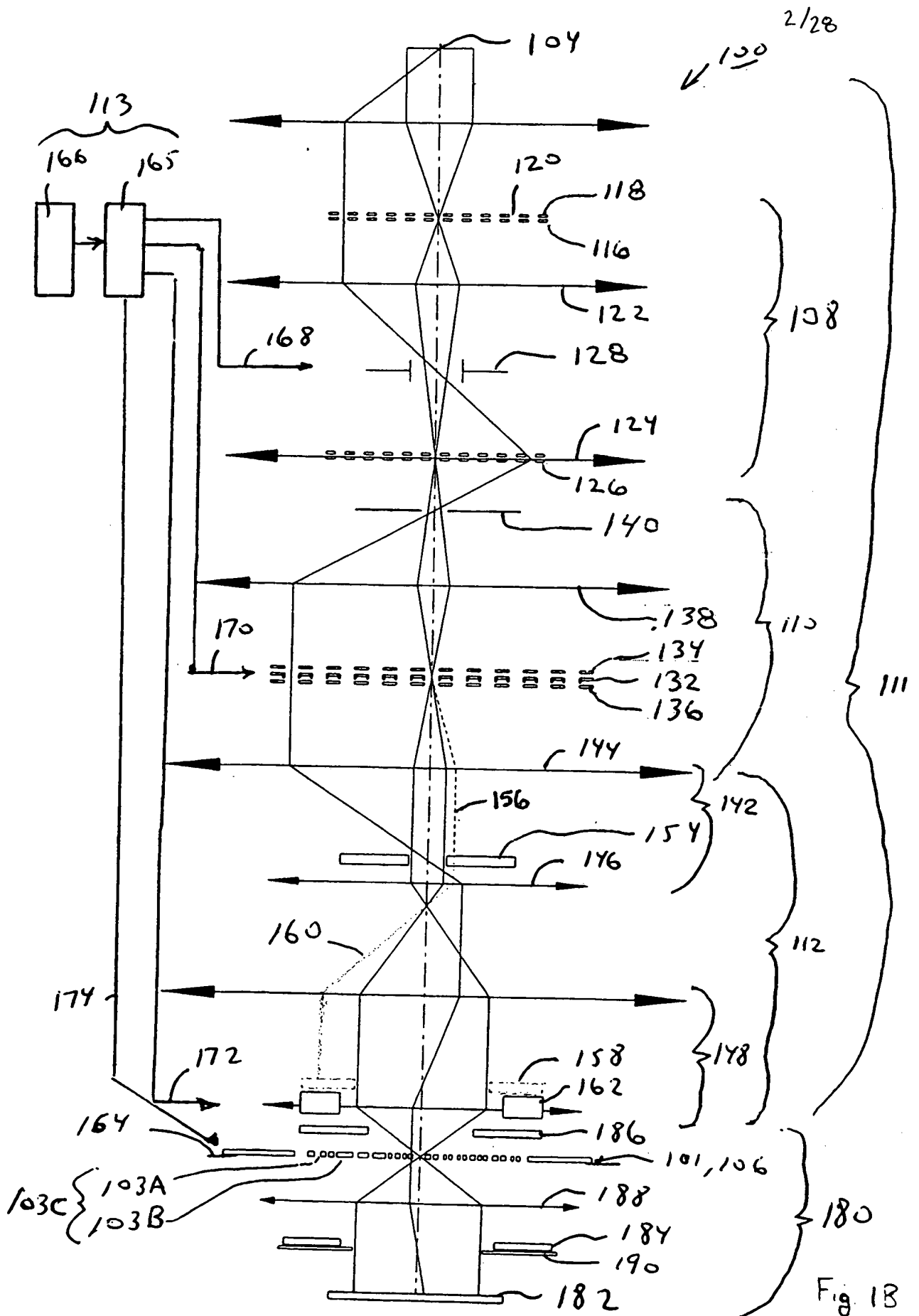


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**200**

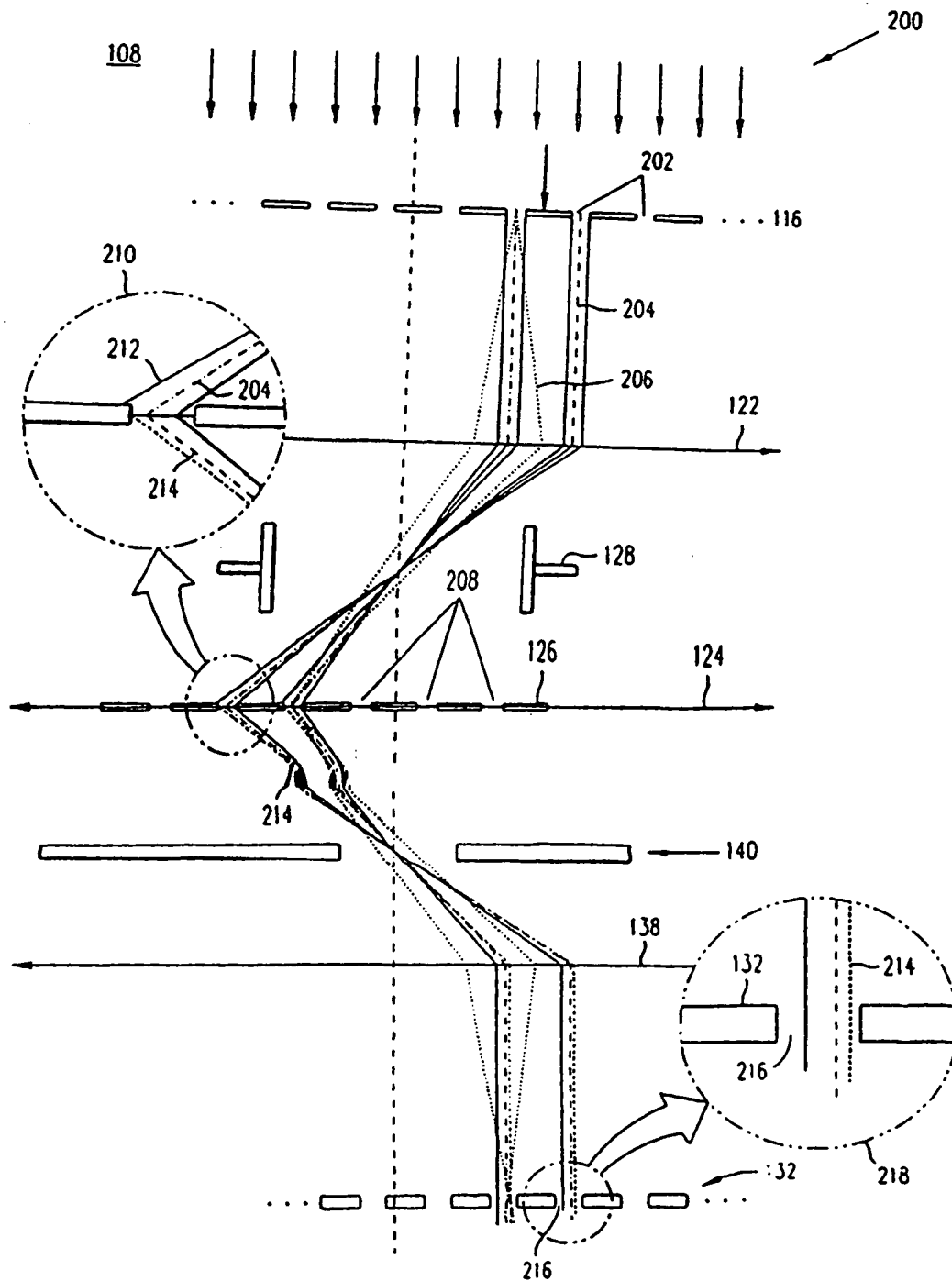


FIG. 2

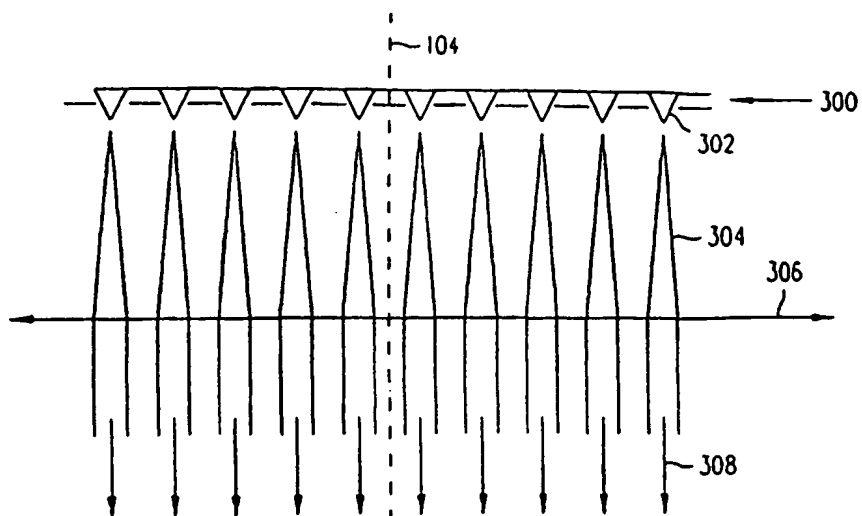


FIG. 3 A

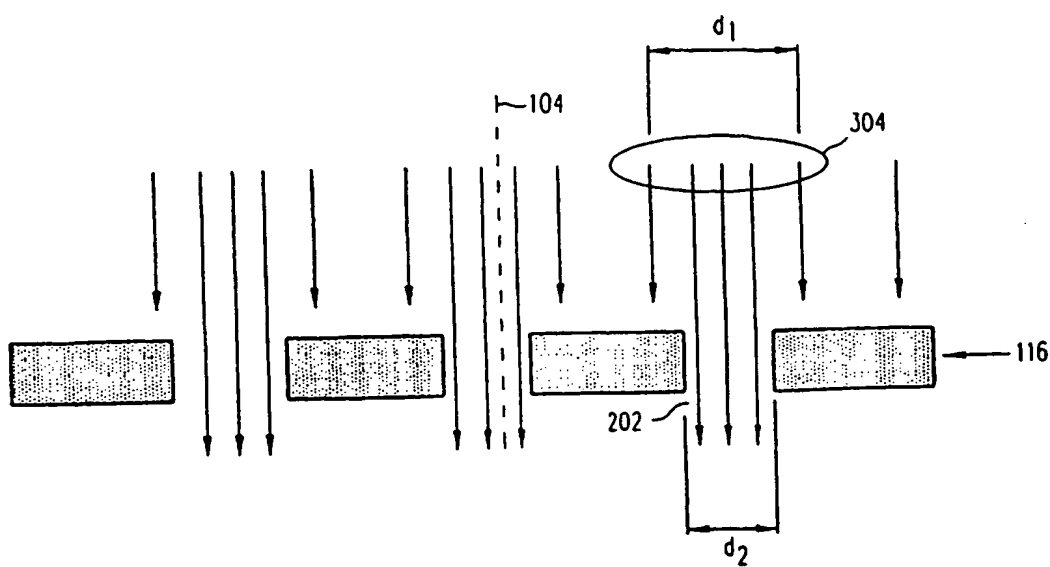


FIG. 4

FIG. 3A

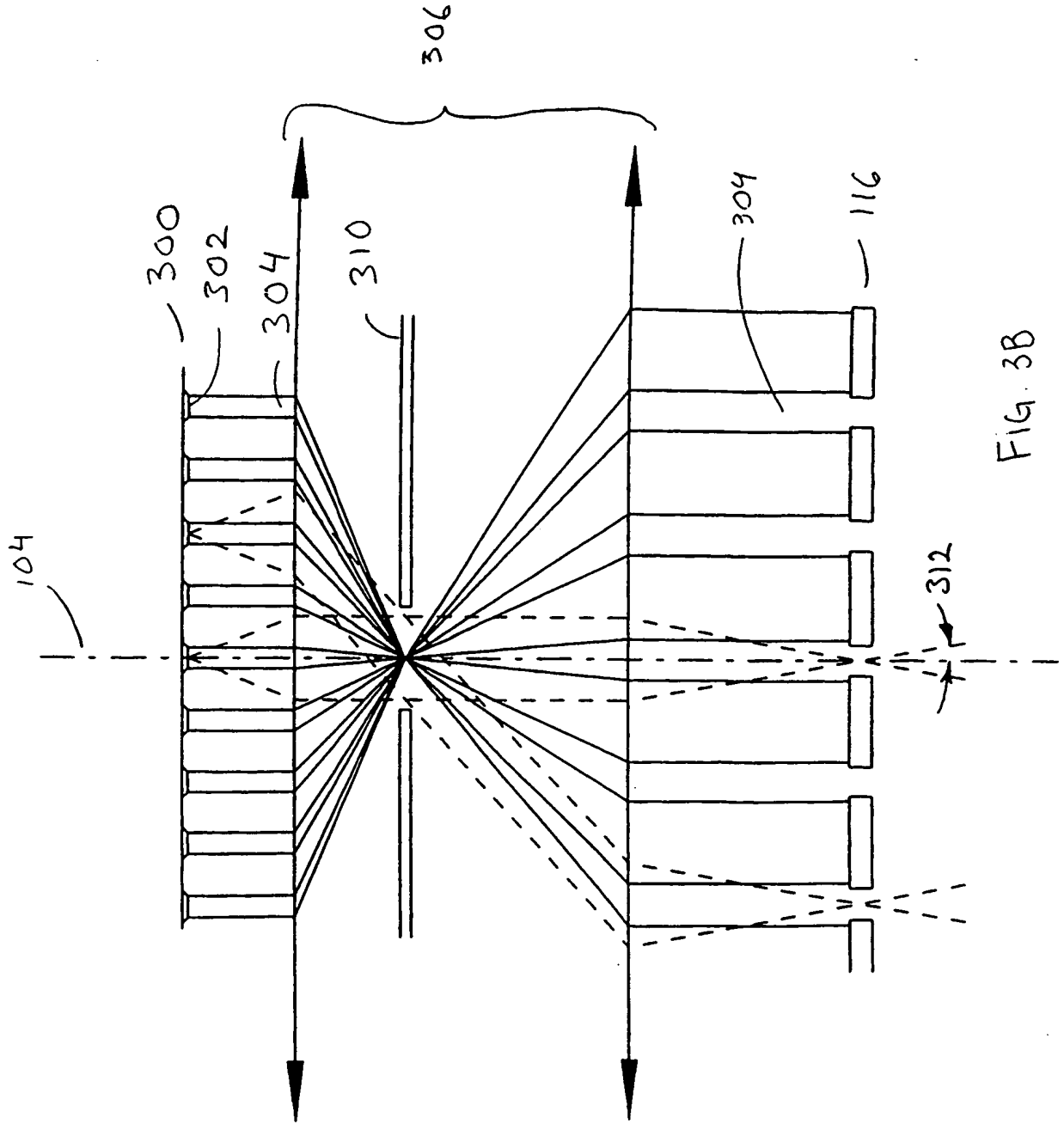
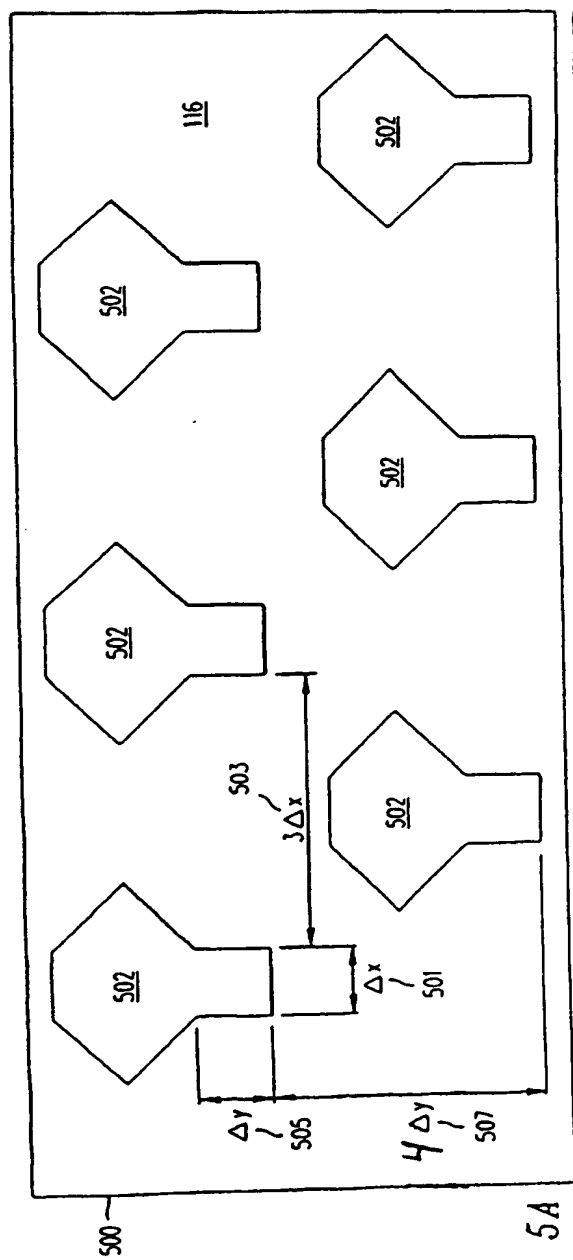
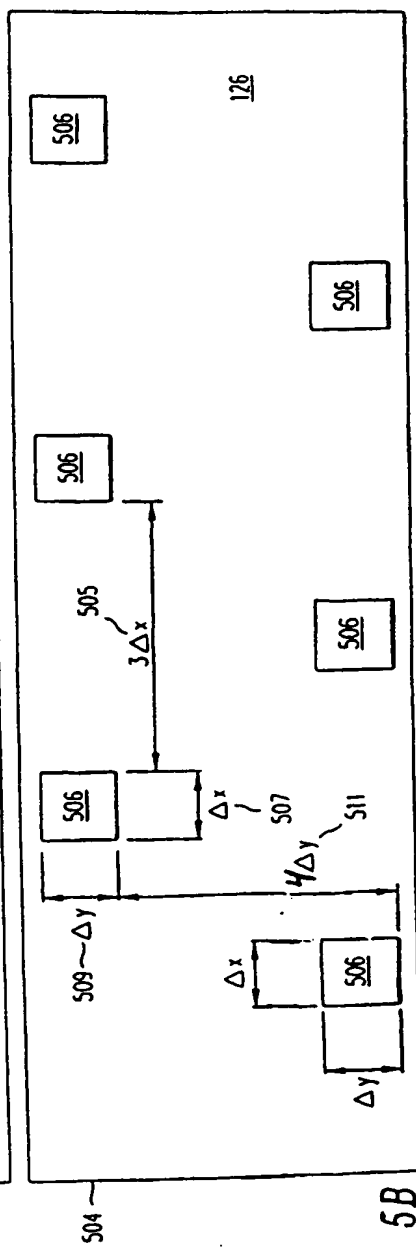


FIG. 3B



**FIG. 5A**



**FIG. 5B**

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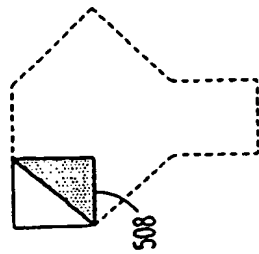


FIG. 5C

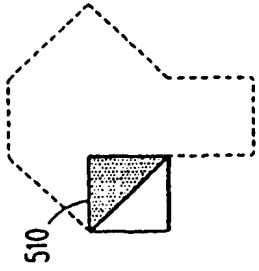


FIG. 5D

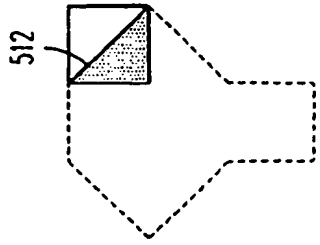


FIG. 5E

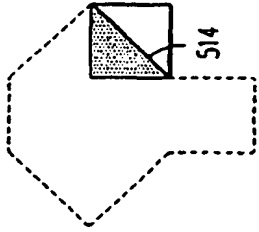


FIG. 5F

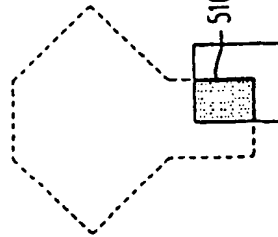


FIG. 5G

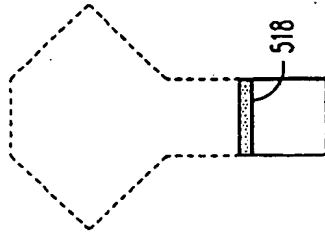


FIG. 5H

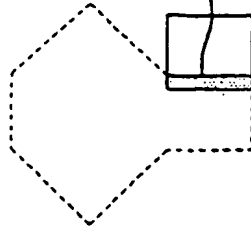


FIG. 5I

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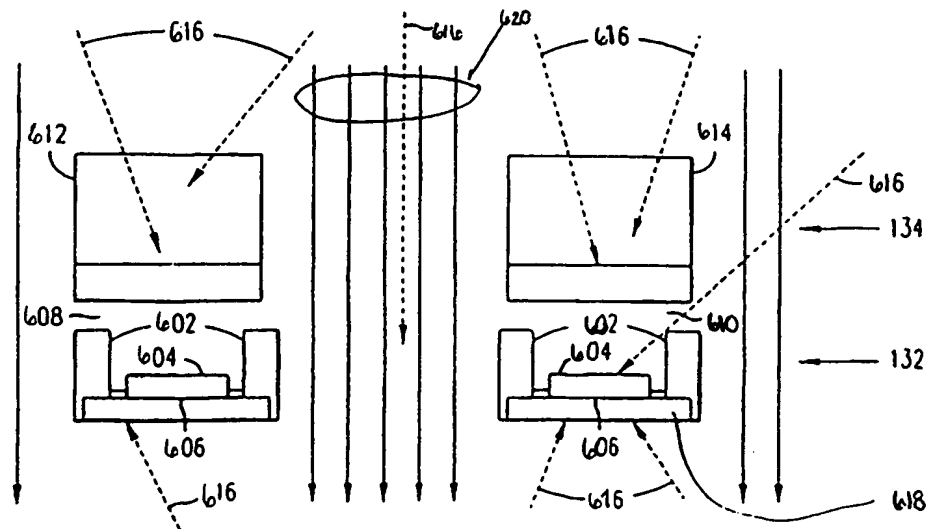


FIG. 6

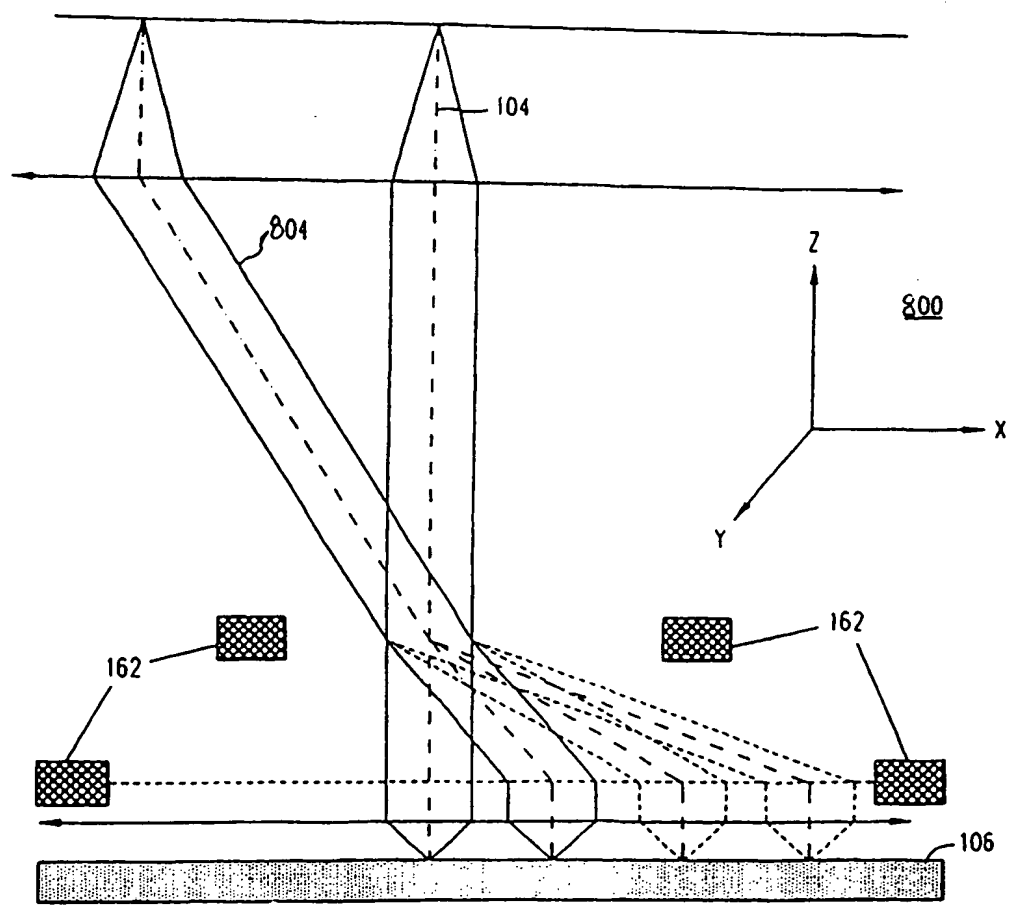


FIG. 8



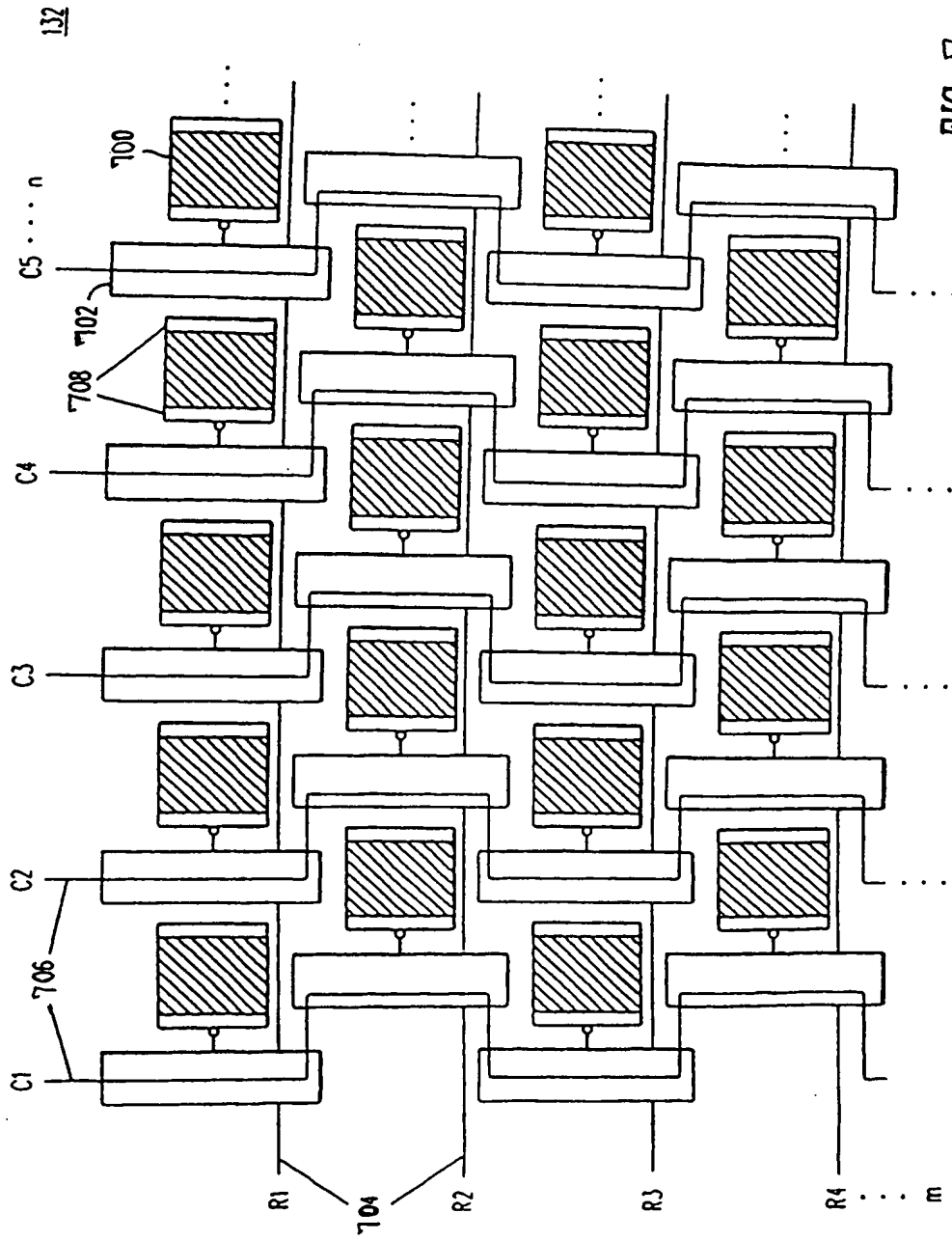


FIG. 7

904

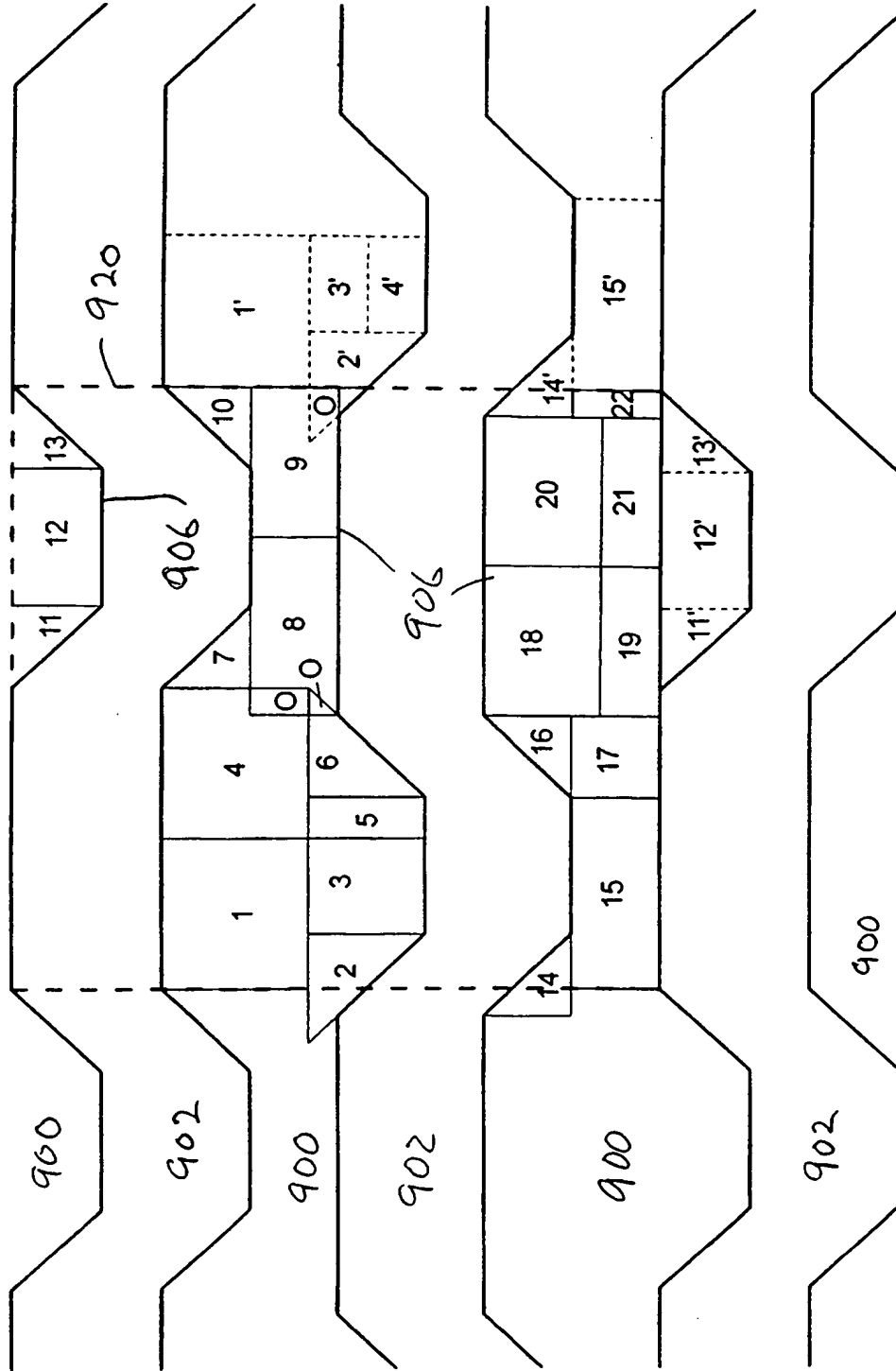


Figure 9A

904

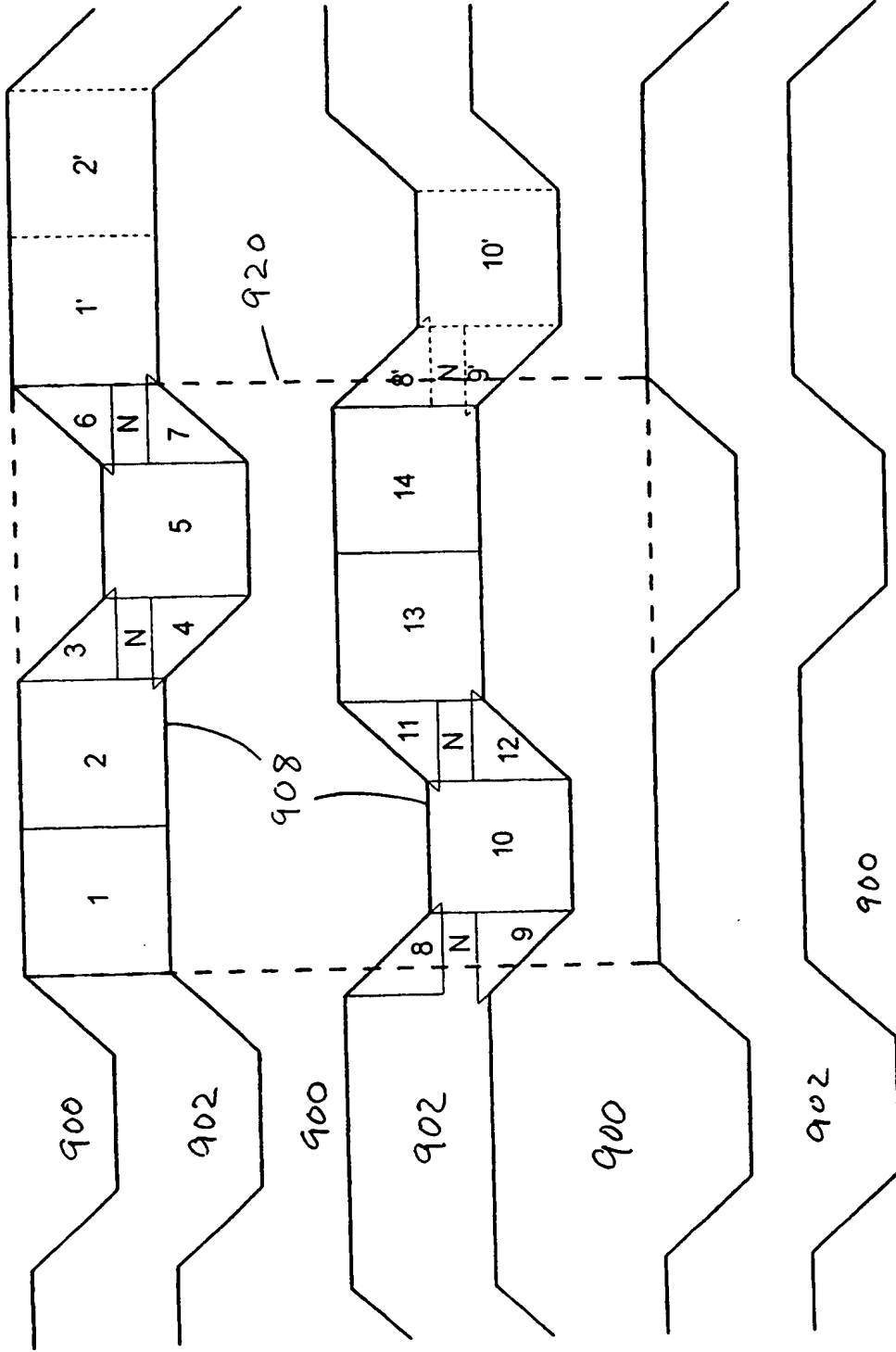


Figure 9B

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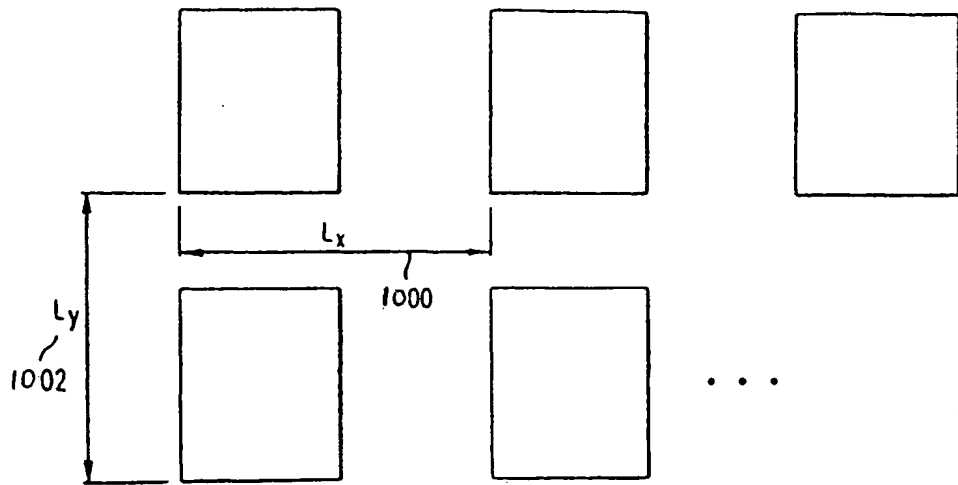


FIG. 10A

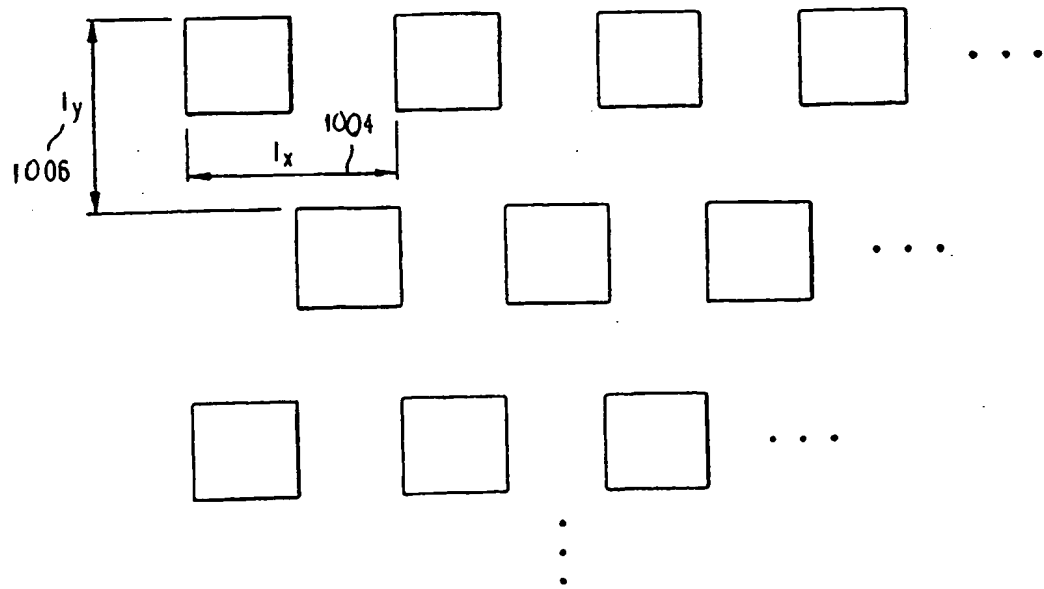
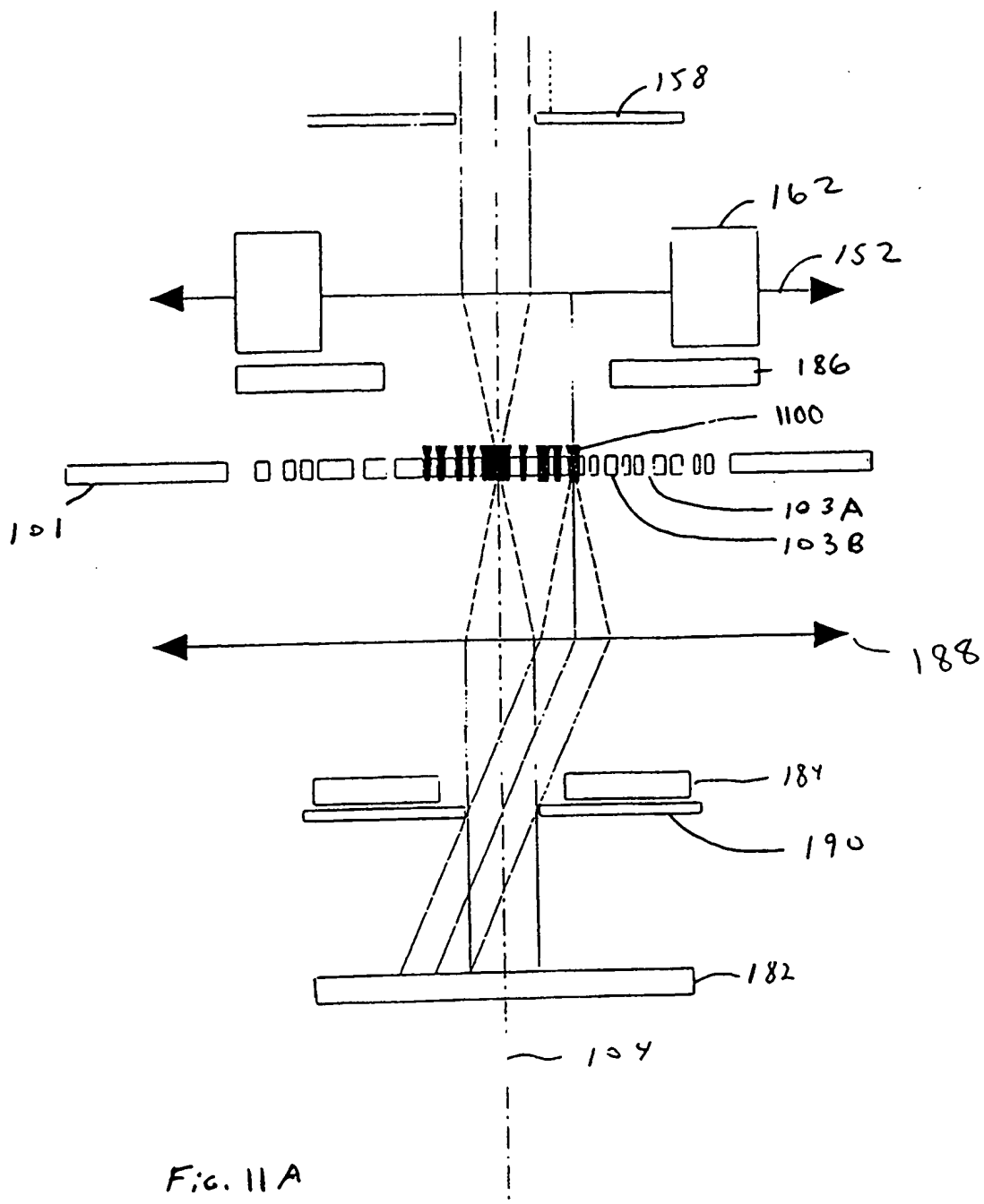


FIG. 10B

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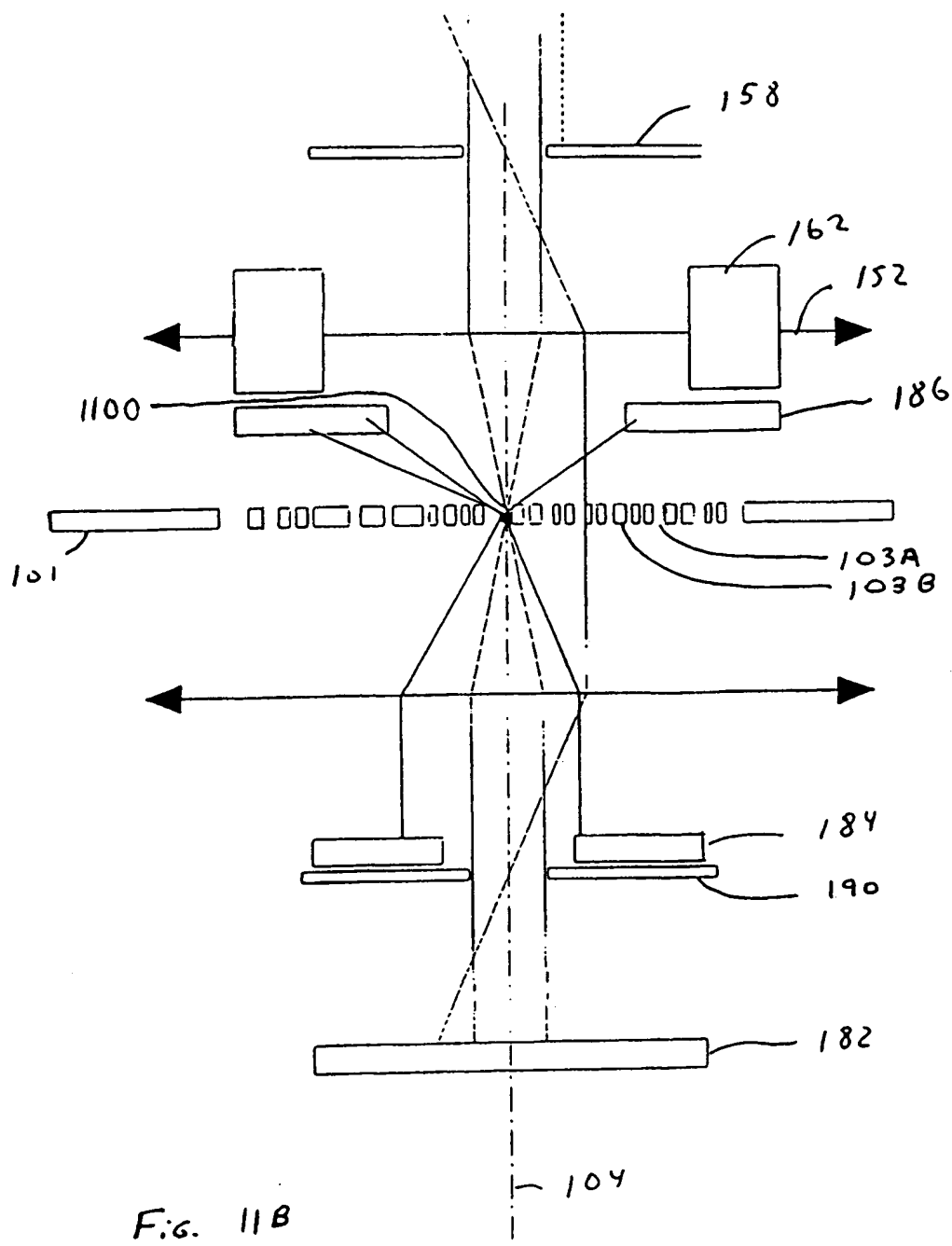
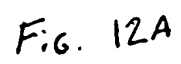


Fig. 11B

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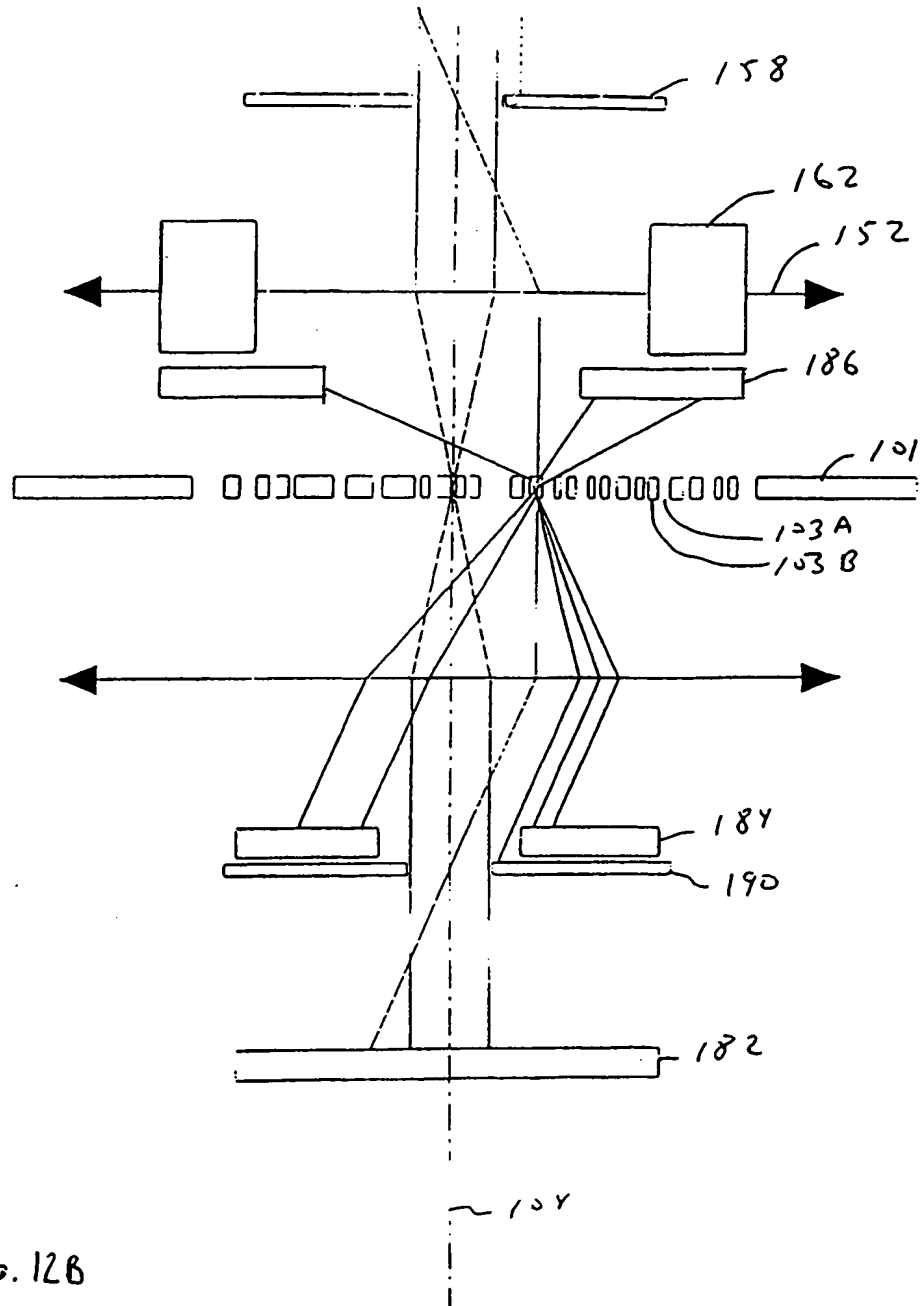


Fig. 12B



# Stencil Mask Defect Detection

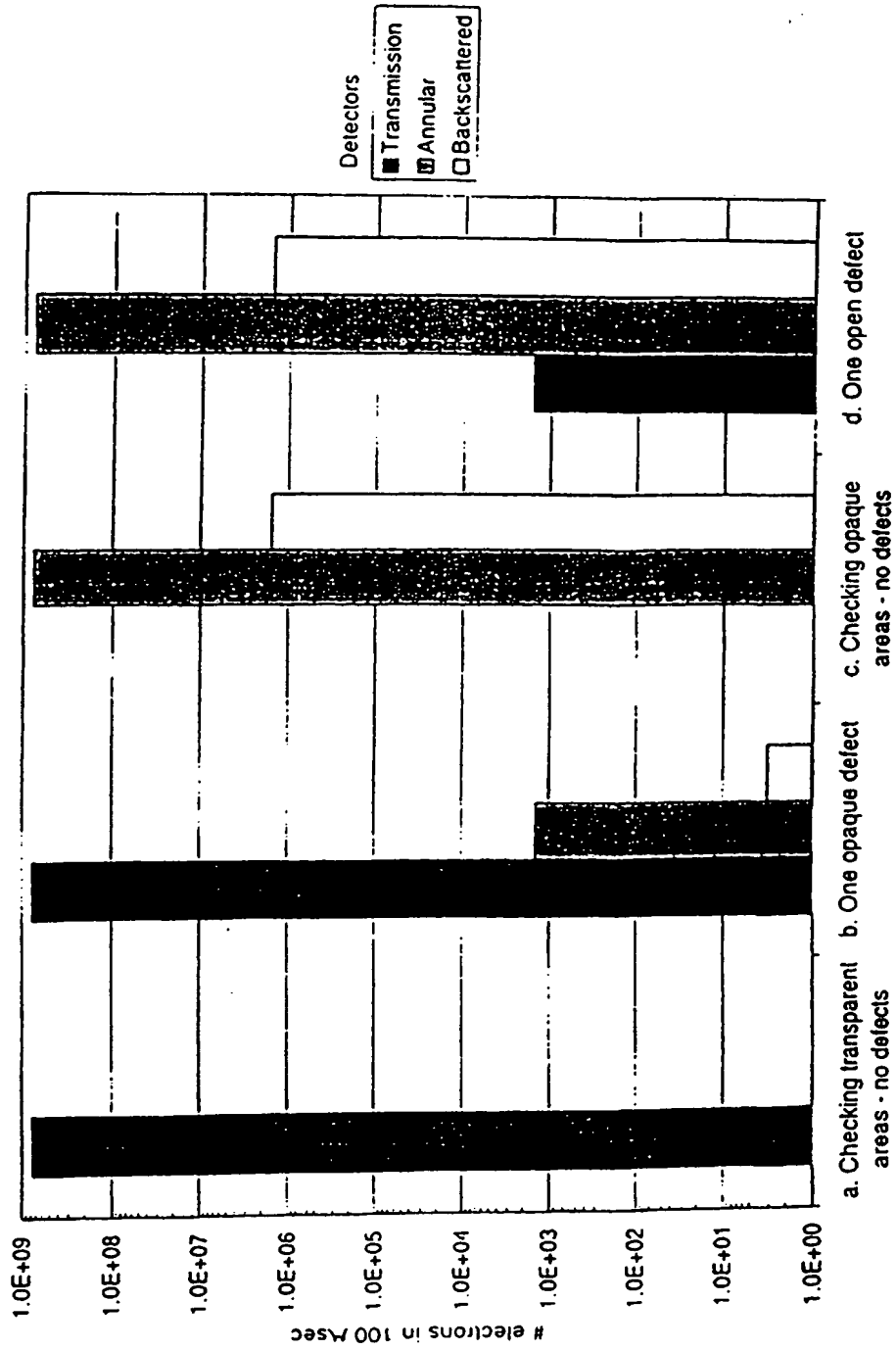


FIG. 13

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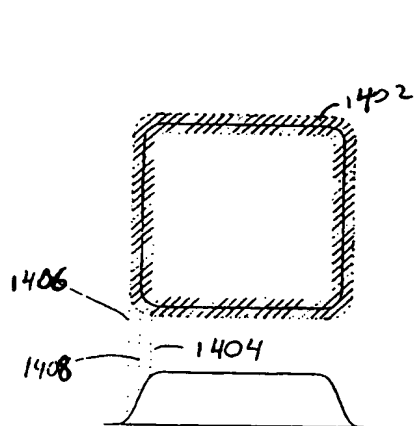


FIG. 14A

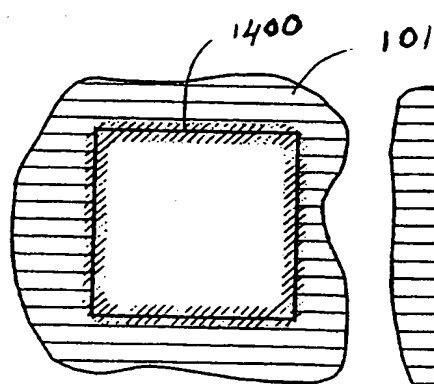


FIG. 14B

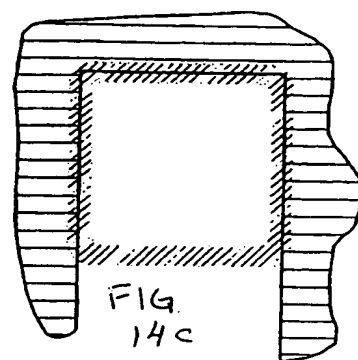


FIG. 14C

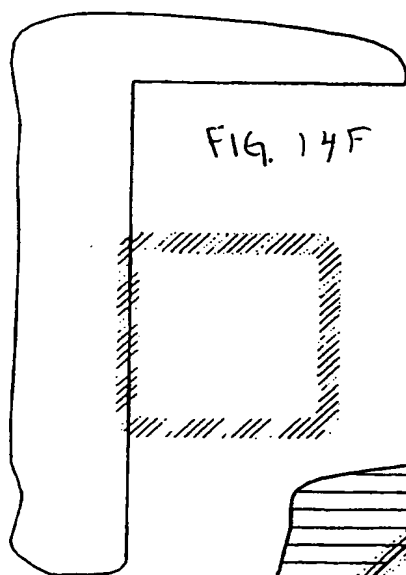


FIG. 14F

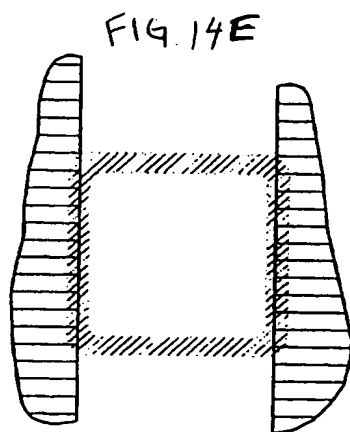


FIG. 14E

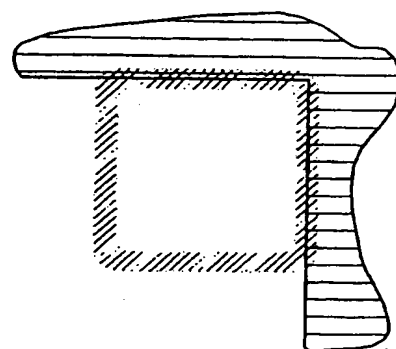


FIG. 14D

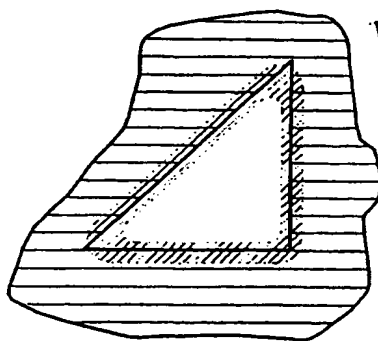


FIG. 14G

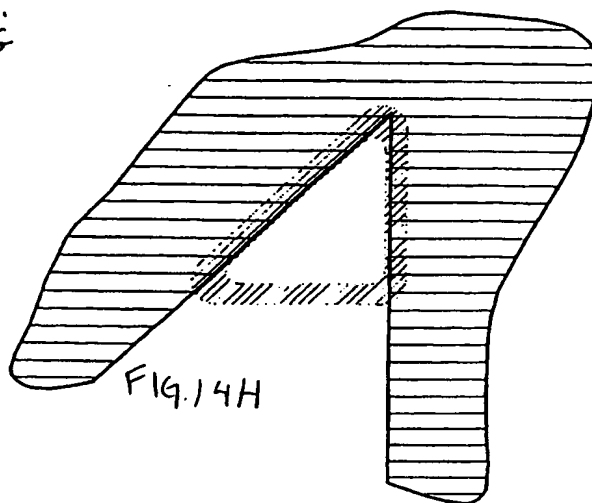


FIG. 14H

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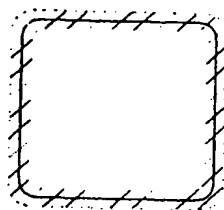


FIG.  
14 I

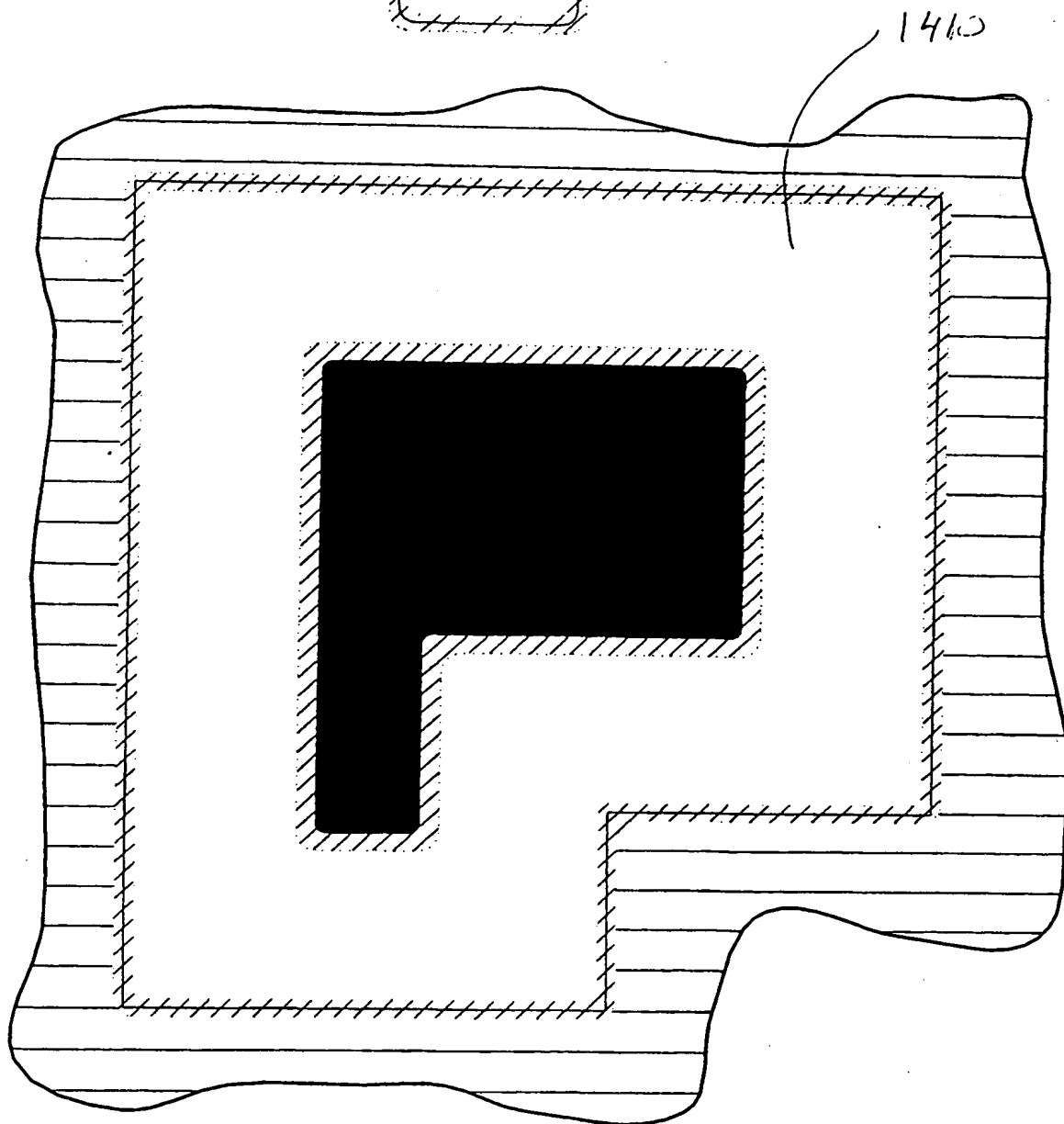


FIG. 14 J

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Fraction of beamlet lost on mask (on all four sides)  
edgewidth (12/88) = 30 nm;  $1\sigma = 12.77$  nm

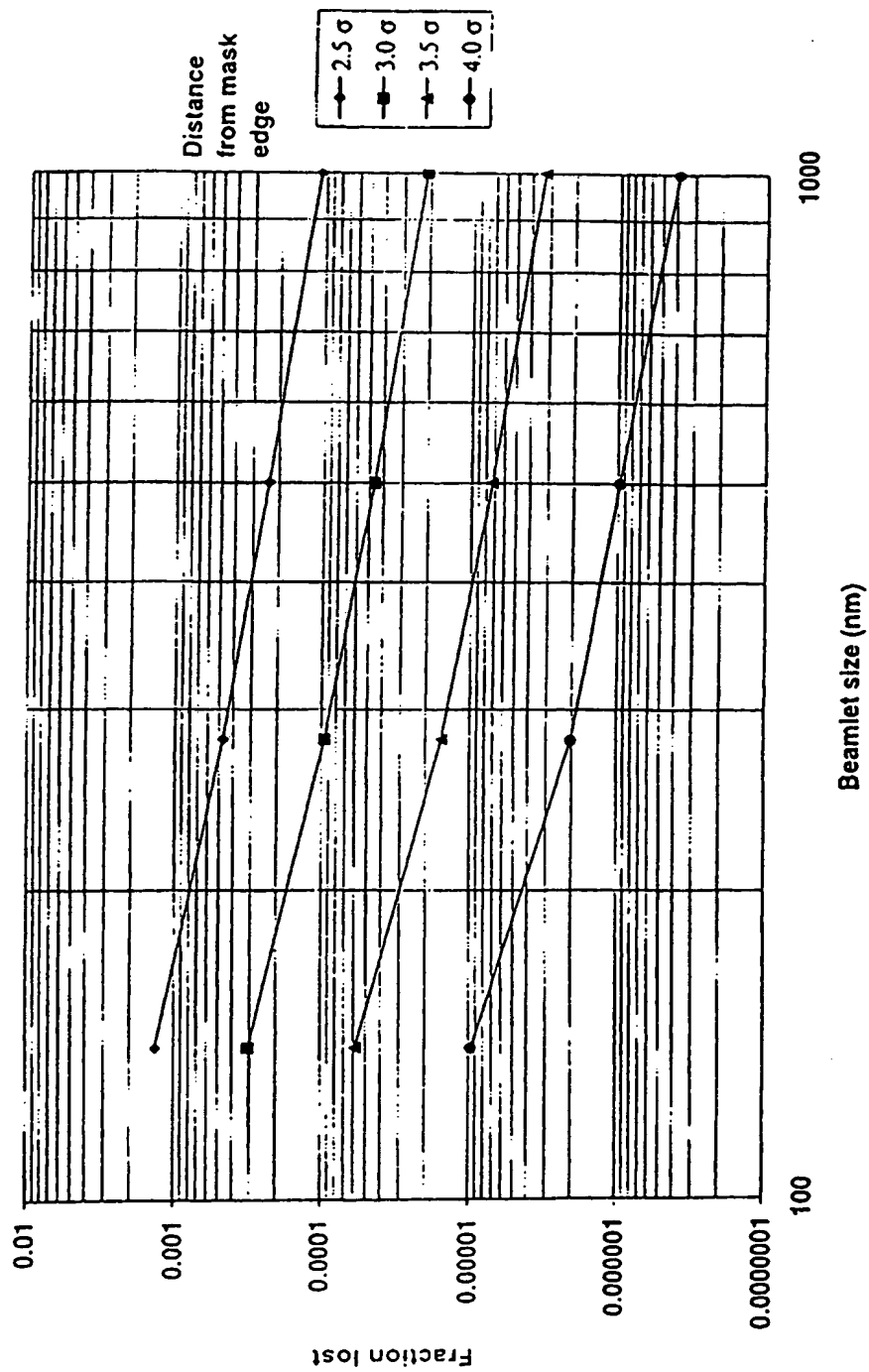
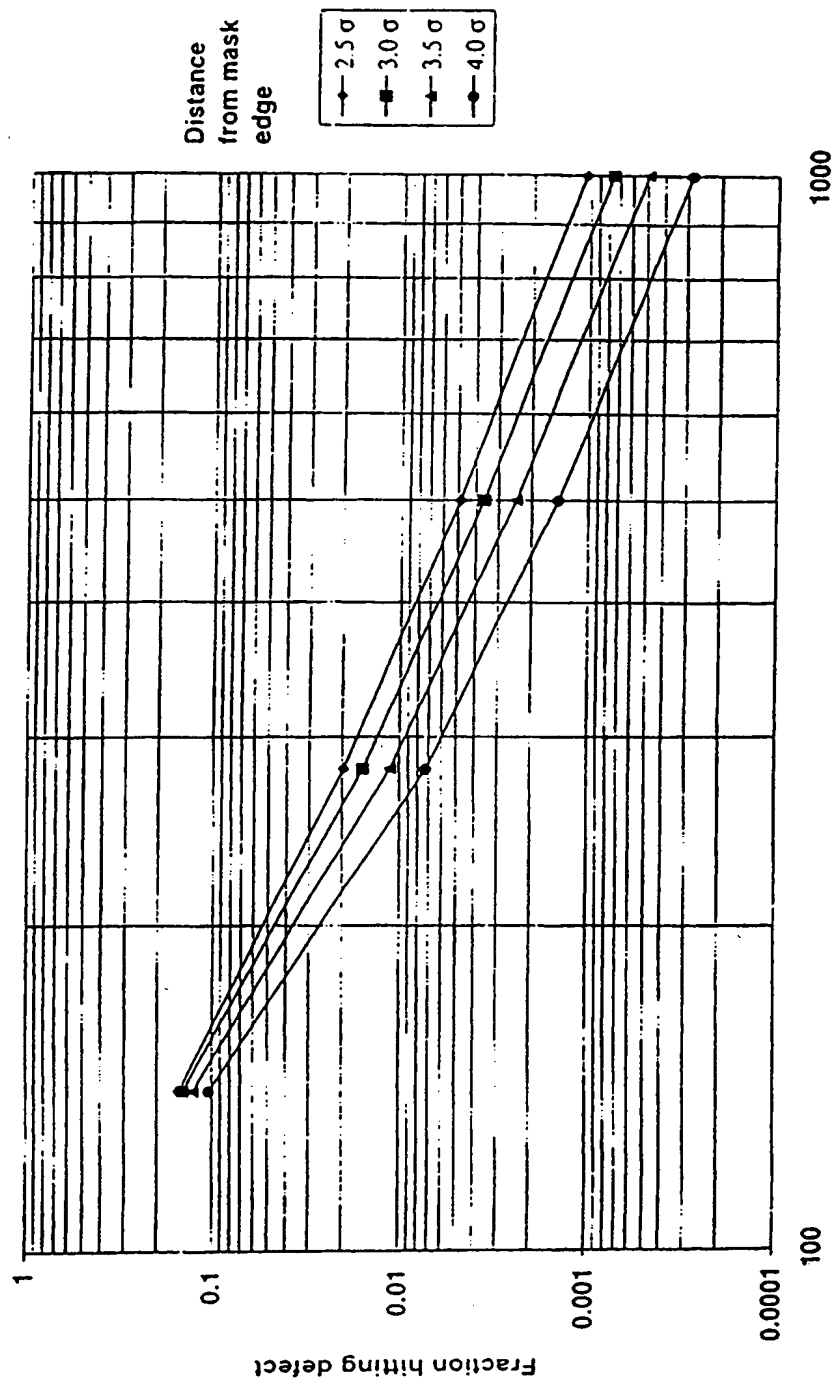


Fig. 15A

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Fraction of beamlet hitting 50 nm defect  
edgewidth (12/88) = 30 nm;  $1\sigma = 12.77$  nm



Beamlet size (nm)

Fig. 158

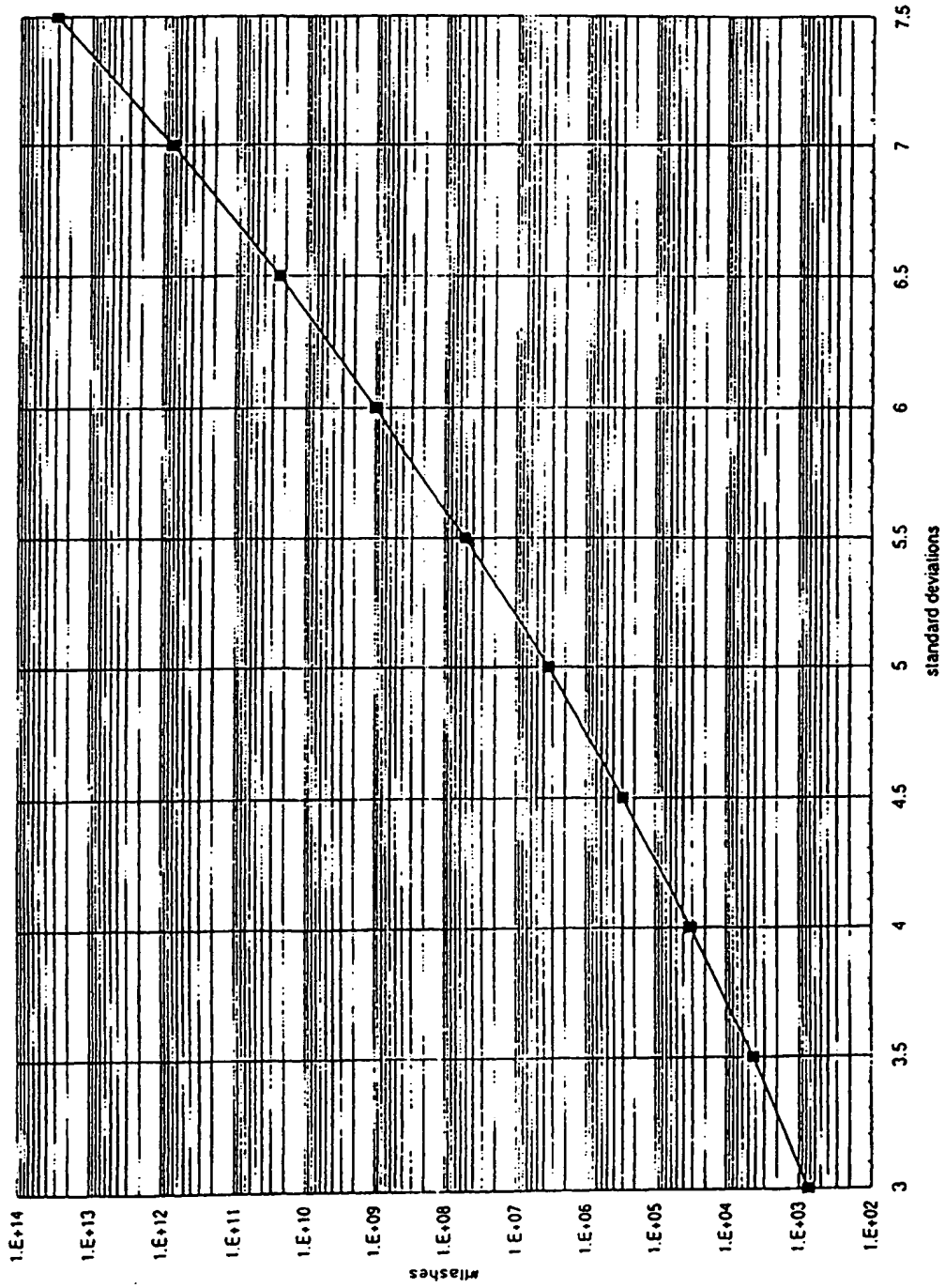
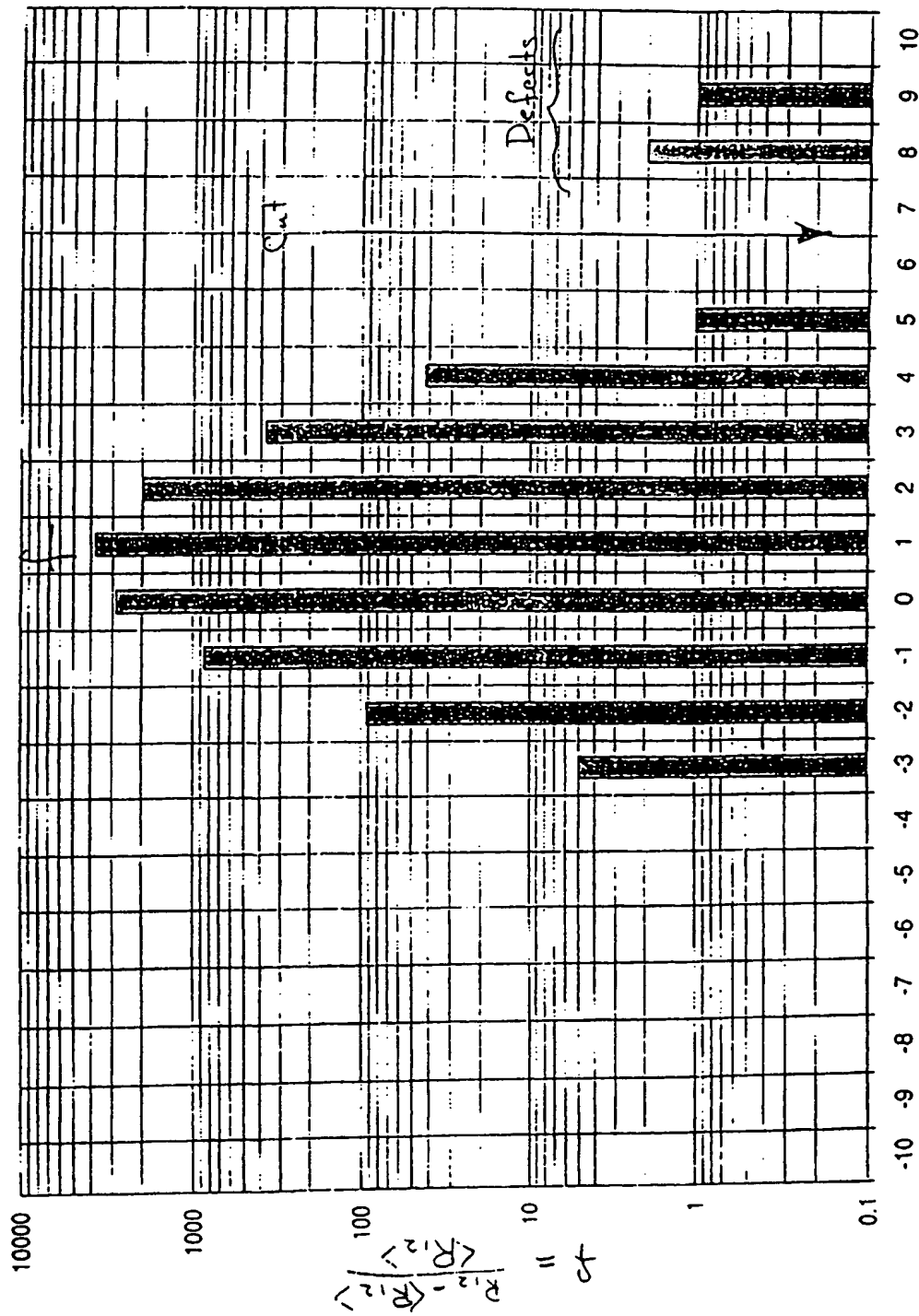


Fig. 15C

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F.6.150

## f/df for clear and opaque defects

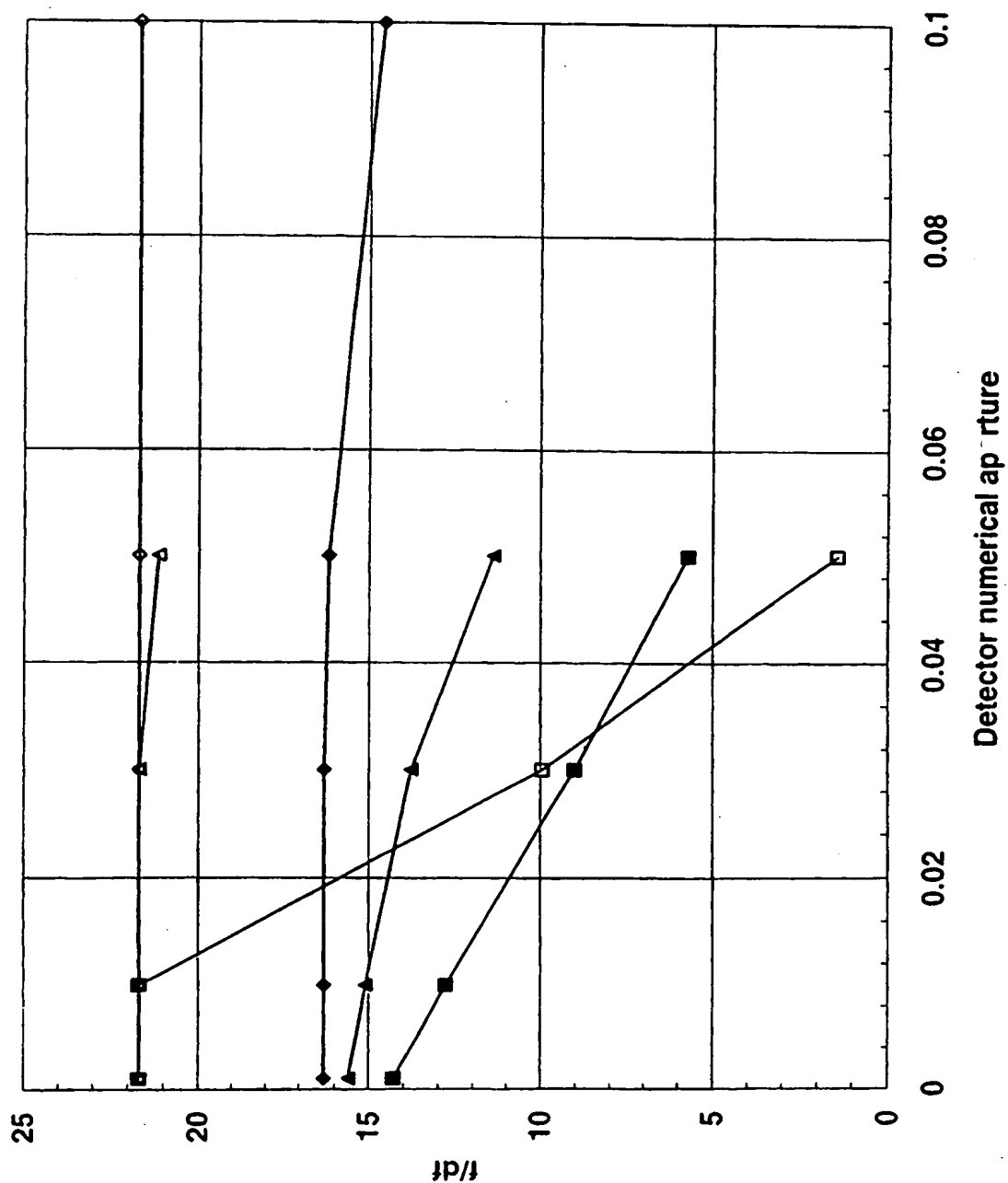


FIG 15E



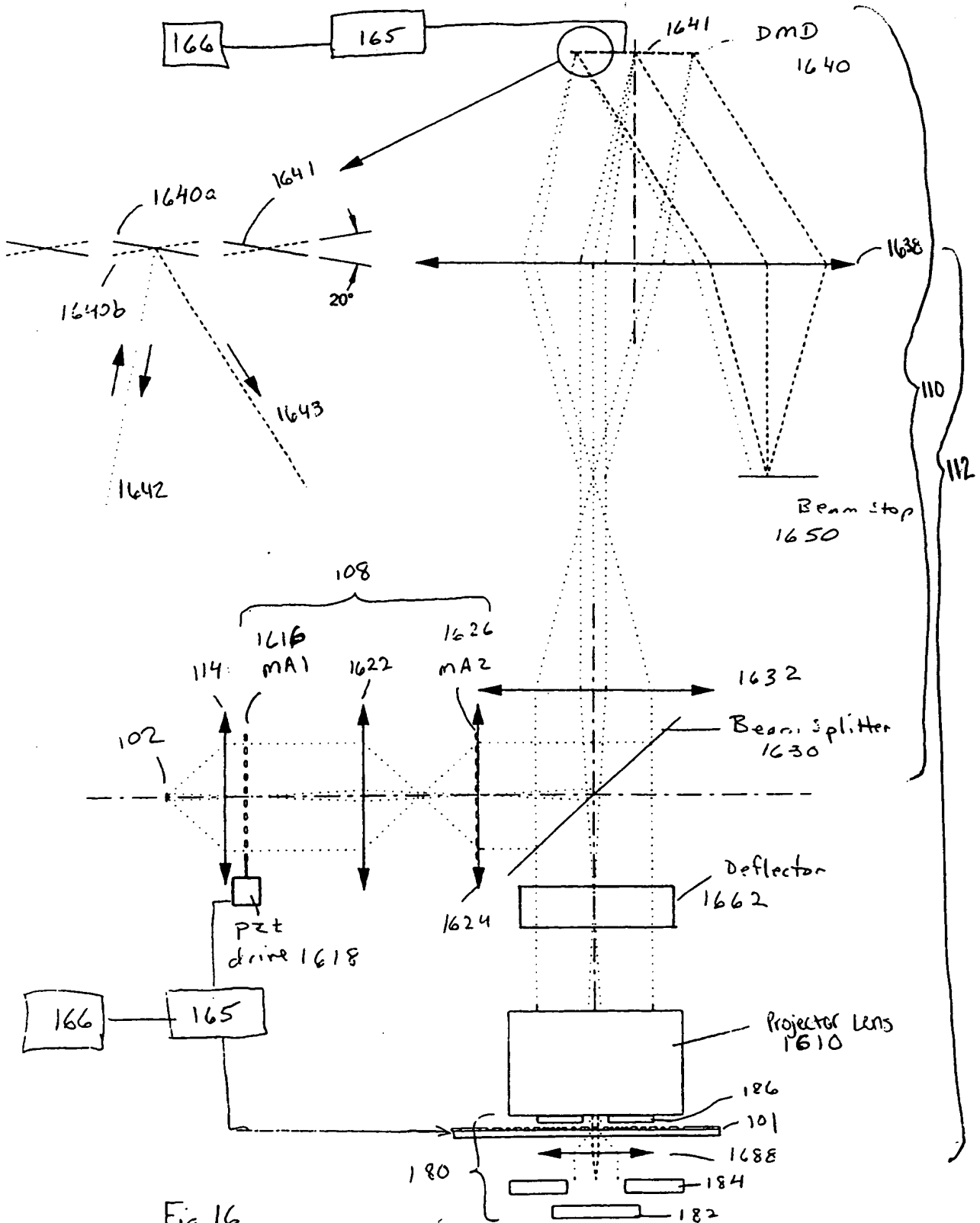


Fig. 16

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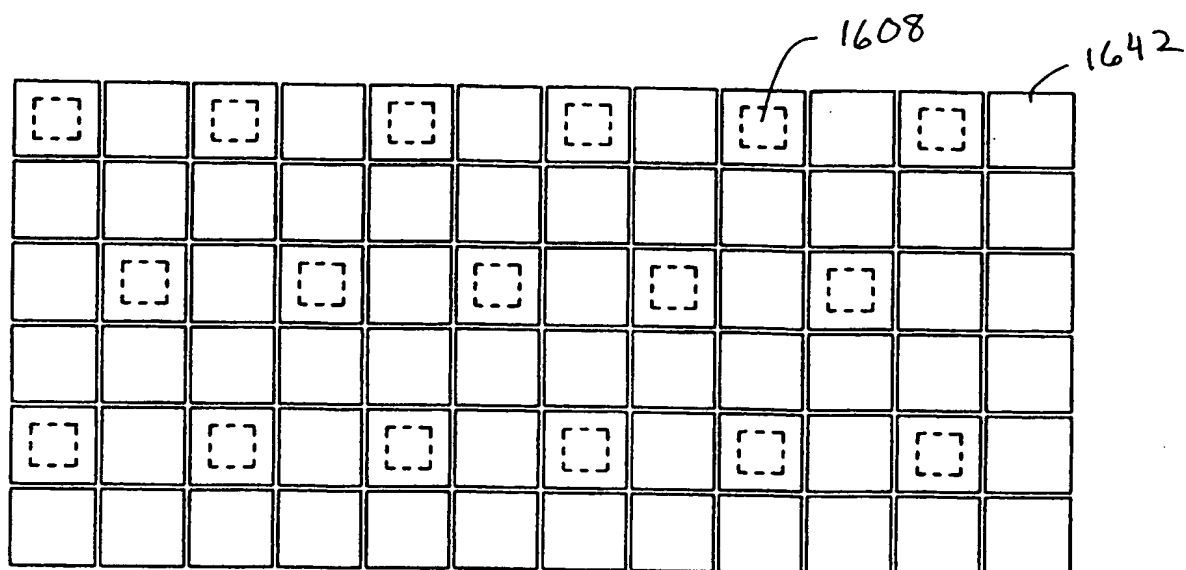


Fig. 17a

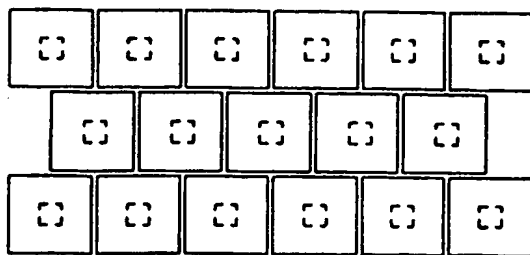


Fig. 17b

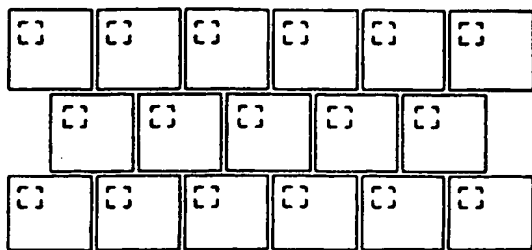


Fig. 17c

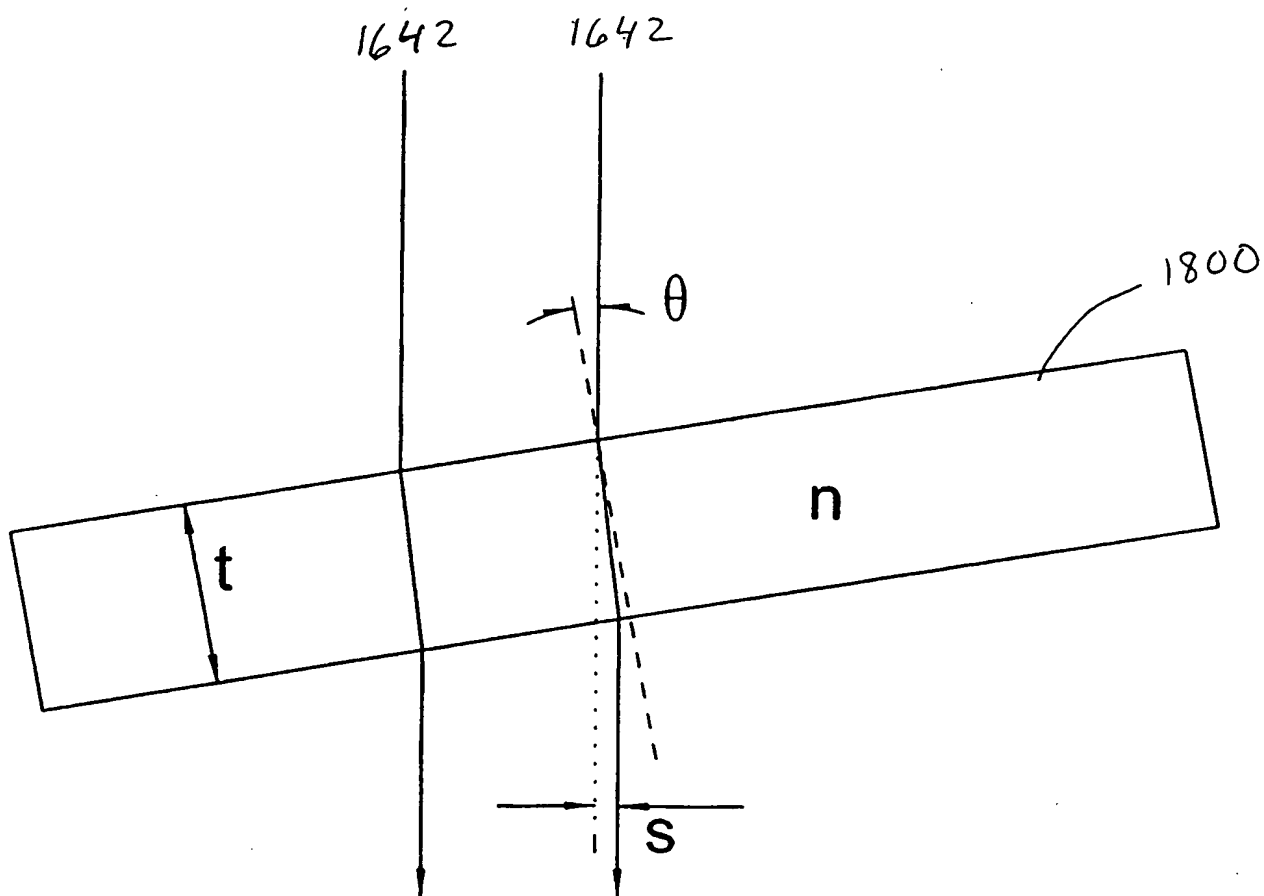


Fig. 18

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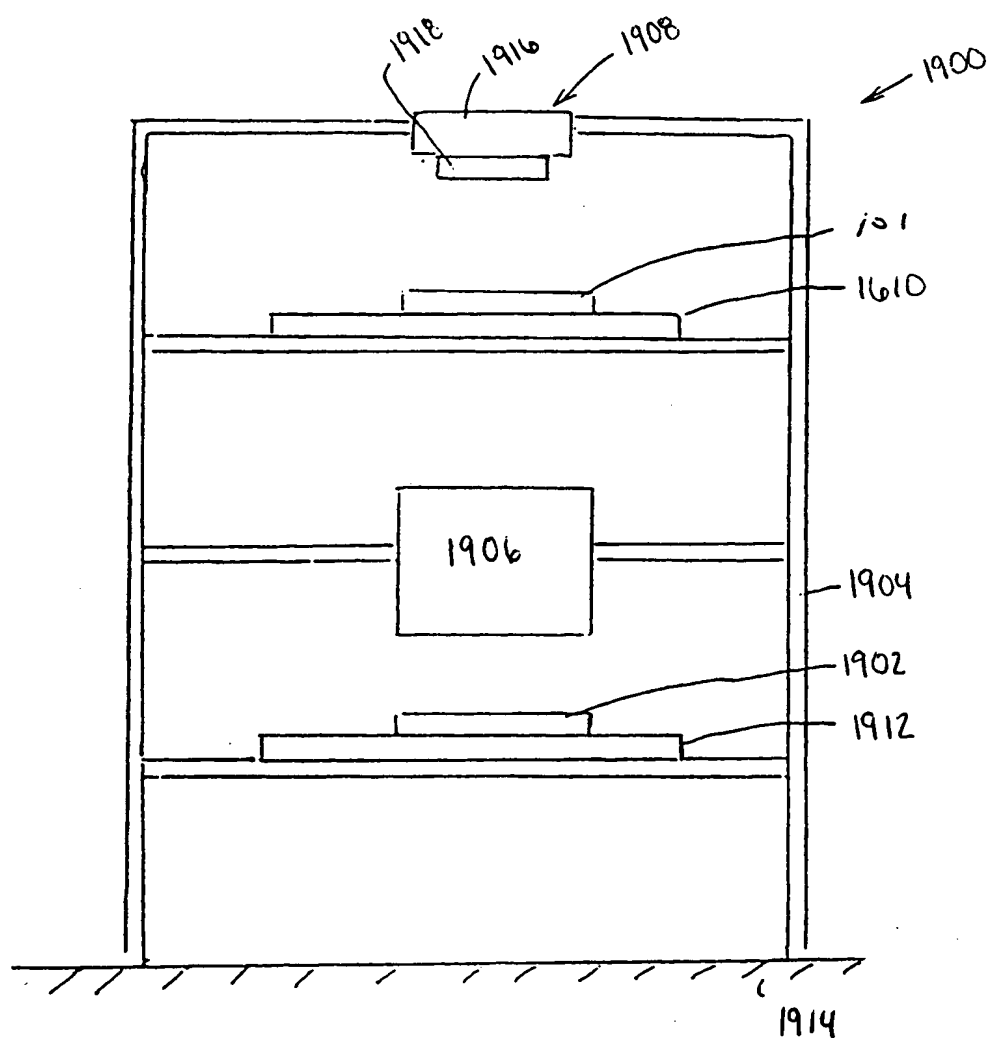


Fig 19